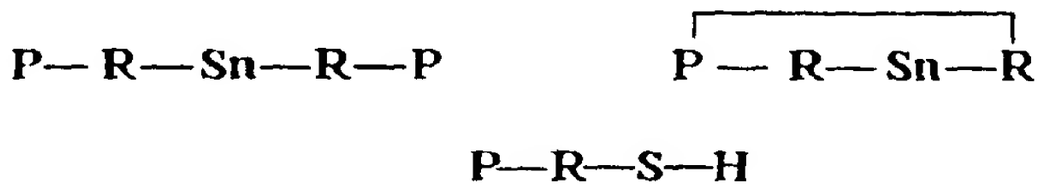
What is claimed is:

1. A process for treating particles, the process comprising the step of:

contacting a particulate material having Formula II:

P-R-X (II)

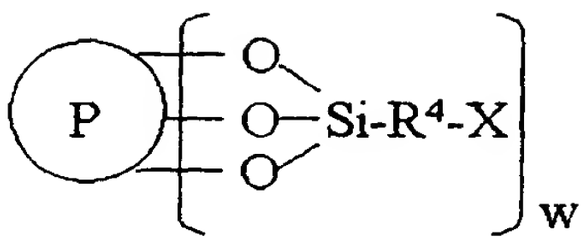
wherein P is a particle, R is a hydrocarbylsiloxyl moiety and X is an anion, with a sulfur-containing compound to produce a particulate material having one or more of the formulae:



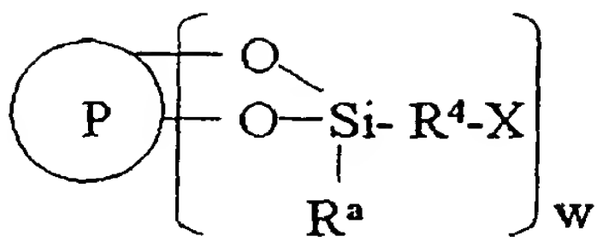
wherein n is an integer from 1 to 10.

2. The process defined in claim 1, wherein n is an integer of from from 2 to 5.

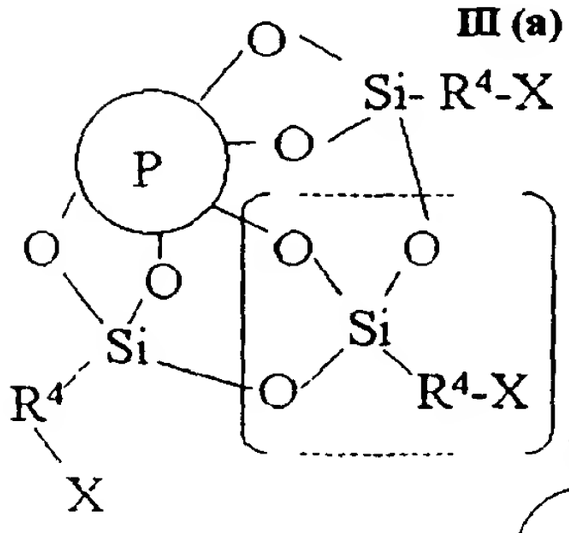
3. The process defined in any one of claims 1-2, wherein the particles of Formula II are selected from the group comprising:



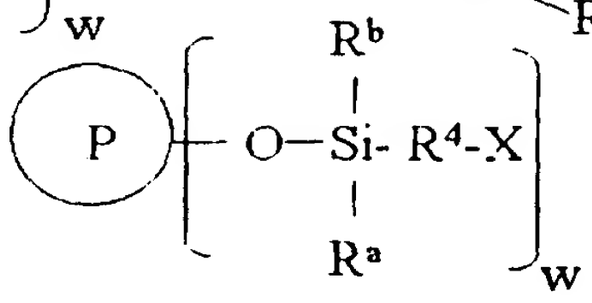
III (a)



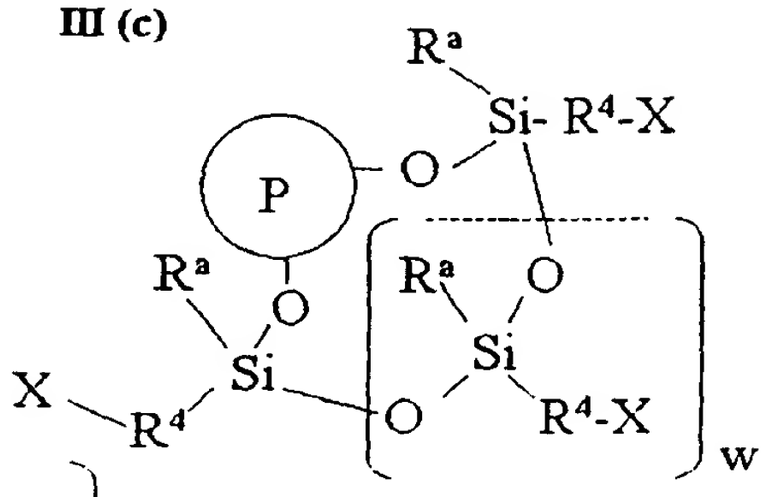
III (c)



III (b)



III (e)



III (d)

wherein:

R^4 is a divalent group that is resistant to hydrolysis at the Si-R^4 bond;

R^a and R^b are the same or different and each is selected from the group comprising hydroxyl, a hydrolysable group, C_{1-40} alkyl, C_{2-40} mono- or C_{3-40} diunsaturated alkenyl and C_{6-40} aromatic;

w is an integer in range of 1 to 10^6 or more.

4. The process defined in claim 3, wherein R^4 has the formula:

$$-(CH_2)_p(O)_o(C_6H_4)_n(CH_2)_m(CH{=}CH)_k-$$

wherein the order of the moieties is not restricted and

k is 0 or 1,

m is a whole number in the range 0 to 20,

n is 0, 1 or 2,

o is 0 or 1, and

p is a whole number in the range 0 to 20,

with the provisos that: (i) the sum of the values of k, m, n, o and p is at least 1 and not more than 20, and (ii) if o is 1, m is 1 or greater or the sum of k, m and n is 1 or greater.

5. The process defined in claim 3, wherein R^4 is $-CH_2CH_2CH_2-$.

6. The process defined in claim 3, wherein X is selected from the group comprising acetate, chloride, bromide, iodide and sulphate.

7. The process defined in claim 3, wherein X is selected from the group comprising chloride and bromide.

8. The process defined in any one of claims 1-7, wherein the sulfur-containing compound is selected from the group comprising sulfides, hydrosulfides and mixtures thereof.

9. The process defined in claim 8, wherein the sulfides comprise ammonium sulfide compounds and alkali metal sulfide compounds.

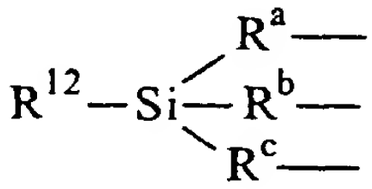
10. The process defined in claim 9, wherein the alkali metal sulfide comprises Na_2S_n, K_2S_n and mixtures thereof, and n is as defined above.

11. The process defined in claim 8, wherein the hydrosulfides comprise compounds having the formula $M(SH)_y$, wherein M is a metal and y is an integer which specifies the valency of M.

12. The process defined in claim 11, wherein the hydrosulfides are selected from the group comprising NaSH, KSH and mixtures thereof.

13. The process defined in any one of claims 1-12, wherein the reaction is conducted in an aqueous medium.

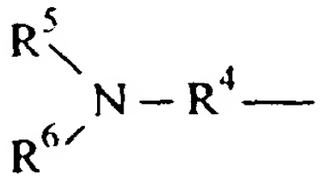
14. The process defined in any one of claims 1-13, wherein the particles have bonded thereoto an aminohydrocarbonsilane moiety having the formula



in which:

R^a, R^b and R^c are the same or different and each is selected from -O- and $-C_pH_{2p}-$, optionally substituted by one or more oxygen atoms and wherein p is an integer of from 1 to 10; and

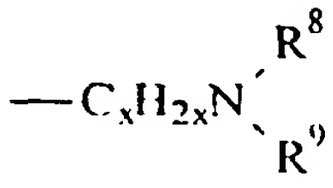
R^{12} is a group of formula:



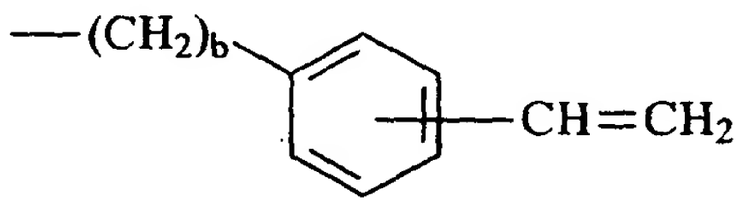
or an acid addition or quaternary ammonium salt thereof in which:

R^4 is a divalent group that is resistant to hydrolysis at the Si-R^4 bond;

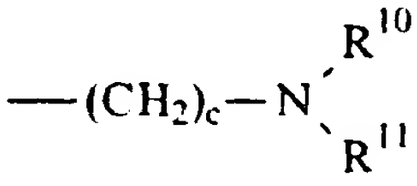
R^5 is selected from: hydrogen; a C_{1-40} alkyl; a C_{2-40} mono-, C_{3-40} di- or C_{4-40} tri-unsaturated alkenyl group; a C_6-C_{40} aryl group; a group of the formula:



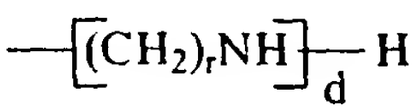
in which x is an integer from 2 to 10, R^8 and R^9, which may be the same or different, are each selected from: hydrogen; C_{1-18} alkyl; C_{2-18} mono-, C_{3-18} di- or C_{4-18} tri-unsaturated alkenyl; phenyl; a group of formula:



wherein b is an integer from 1 to 10; a group of formula:



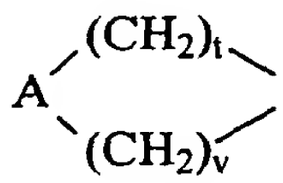
wherein c is an integer from 1 to 10, and R^{10} and R^{11} may be the same or different and are each selected from: hydrogen, C_{1-10} alkyl group or C_{2-10} alkenyl group, provided that there is no double bond in the position alpha to the nitrogen atom; and a group of formula:



wherein r is an integer from 1 to 6 and d is an integer from 1 to 4;

R^6 may be any of the groups defined for R^5 with the provisos that: (i) R^5 and R^6 do not have a tertiary carbon atom adjacent to the nitrogen atom, and (ii) at least one of R^5 and R^6 has a carbon chain at least 8 carbon atoms in length uninterrupted by any heteroatoms;

or R^5 and R^6 may together form a divalent group of formula:



in which A is selected from: a -CHR group or a -NR group in which R is hydrogen or a C_{6-40} alkyl or C_{6-40} alkenyl group, a C_6-C_{40} aryl group, an oxygen atom and a sulfur atom, and t and v are each independently 1, 2, 3 or 4; provided that the sum of t and v does not exceed 6.

15. The process defined in any one of claims 1-14, whercin the particles comprise inorganic water insoluble compounds.

16. The process defined in any one of claims 1-15, wherein the particles comprise silica.

17. The process defined in any one of claims 1-15, wherein the particles are selected from the group consisting of titanium oxide, ferric oxide, hydrated ferric oxide, ferrous oxide, antimony oxide, barium carbonate, zinc oxide, zinc borate, lead oxide (including red lead oxide), dibasic lead phosphite, lead silicate, tribasic lead sulfate and mixtures thereof.

18. The process defined in any one of claims 1-17, comprising the further step of:

admixing the treated particles with a polymer solution and forming the mixture into a polymer dispersion.

19. The process defined in any one of claims 1-17, comprising the further step of:

admixing a slurry of treated particles with a polymer solution and forming the mixture into a polymer dispersion.

20. The process defined in any one of claims 18-19, wherein the polymer solution comprises a polymer and a solvent.

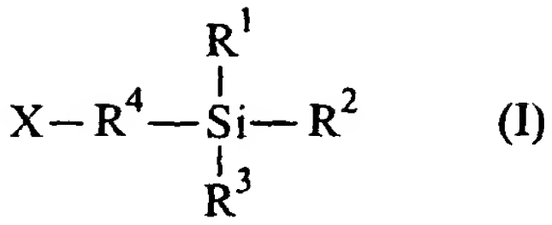
21. The process defined in any one of claims 18-20, wherein the polymer is selected from the group consisting of an elastomer, a graft polymer or block polymer of monomers having at least one ethylenically unsaturated bond and polymerizable through this unsaturation, a plastic and mixtures thereof.

22. The process defined in claim 21, wherein the elastomer is selected from the group consisting of natural rubber (NR), cis-1,4-polyisoprene rubber (IR), polybutadiene rubber (BR), styrene-butadiene rubber (SBR), acrylonitrile-butadiene rubber (NBR), hydrogenated acrylonitrile-butadiene rubber (HNBR), butyl rubber (IIR), halogenated butyl rubber (HIIR), ethylene-propylene monomer (EPM) rubber, ethylene-propylene-diene monomer (EPDM) rubber, chloroprene rubber (CR), ethylene-vinyl acetate (EVM) rubber, silicone rubber (Q), epichlorohydrin (ECO) rubber, urethane rubber (AU EU) and mixtures thereof.

23. The process defined in claim 21, wherein the plastic is selected from the group consisting of polystyrene, polyethylene, polypropylene, chlorinated polyethylene, acrylonitrile-butadiene-styrene (ABS) polymers, ethylene-vinyl-acetate (EVA) plastic, polyvinyl chloride (PVC), plasticized polyvinyl chloride (PVC), polymethylmethacrylate (PMMA), epichlorohydrin (ECO) plastic and mixtures thereof.

24. A process for treating particles, the process comprising the steps of:

(i) contacting a particulate material with a compound of Formula I:



(I)

in which:

at least one of R^1, R^2 and R^3 are hydroxyl or hydrolysable groups;

R^4 is a divalent group that is resistant to hydrolysis at the Si-R^4 bond; and

X is an anion; and

(ii) contacting the particulate material with a sulfur-containing compound.

25. The process defined in claim 24, wherein each of R^1, R^2 and R^3 is hydroxyl or a hydrolysable group.

26. The process defined in any one of claims 24-25, wherein the hydrolysable group has the formula $-OC_pH_{2p+1}$, where p has a value from 1 to 10.

27. The process defined in any one of claims 22-26, wherein R^4 has the formula:

$$-(CH_2)_p(O)_o(C_6H_4)_n(CH_2)_m(CH=CH)_k-$$

wherein the order of the moieties is not restricted and

k is 0 or 1,

m is a whole number in the range 0 to 20,

n is 0, 1 or 2,

o is 0 or 1, and

p is a whole number in the range 0 to 20.

with the provisos that: (i) the sum of the values of k, m, n, o and p is at least 1 and not more than 20, and (ii) if o is 1, m is 1 or greater or the sum of k, m and n is 1 or greater.

28. The process defined in any one of claims 22-27, wherein X is selected from the group comprising acetate, chloride, bromide, iodide and sulphate.

29. The process defined in any one of claims 22-27, wherein X is selected from the group comprising chloride and bromide.

30. The process defined in any one of claims 22-29, wherein the sulfur-containing compound is selected from the group comprising sulfides, hydrosulfides and mixtures thereof.

31. The process defined in claim 30, wherein the sulfides comprise ammonium sulfide compounds and alkali metal sulfide compounds.

32. The process defined in claim 31, wherein the alkali metal sulfide comprises Na_2S_n, K_2S_n and mixtures thereof, wherein n is as defined above.

33. The process defined in claim 30, wherein the hydrosulfides comprise compounds having the formula $M(SH)_y$, wherein M is a metal and y is an integer which specifies the valency of M.

34. The process defined in claim 33, wherein the hydrosulfides are selected from the group comprising NaSH, KSH and mixtures thereof.

35. The process defined in any one of claims 22-34, wherein Steps (i) and (ii) are conducted sequentially.

36. The process defined in any one of claims 22-35, wherein the reaction is conducted in an aqueous medium to produced an aqueous slurry of treated particles.

37. The process defined in claim 36, comprising the further step of admixing the aqueous slurry of treated particles with a polymer solution and forming the mixture into a polymer dispersion.